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**B7A ACA A40X**

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**WO 90/04998 A1 US 4187570 A**

(58) Field of search

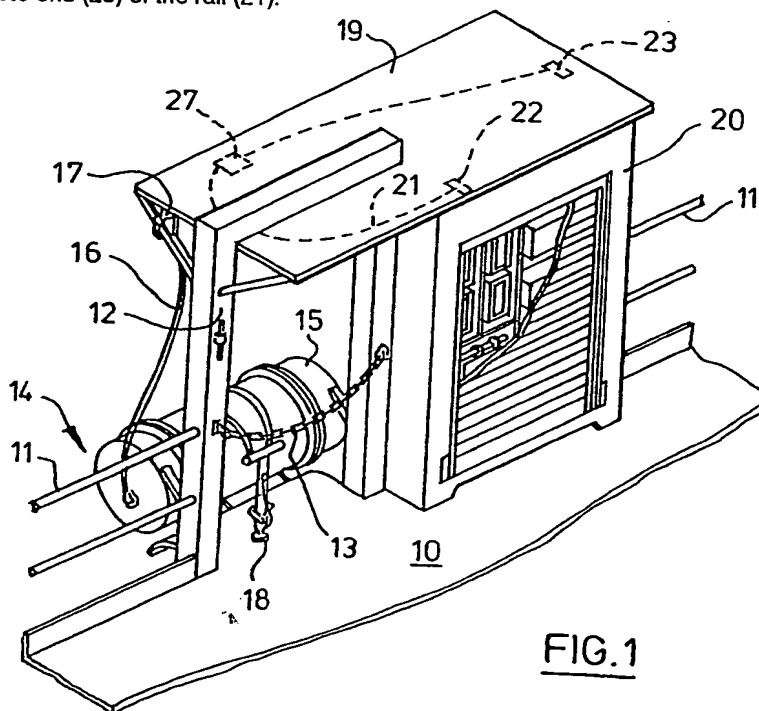
**UK CL (Edition K) B7A ACA AGH**

**INT CL<sup>5</sup> B63C**

**Online databases: WPI**

## (54) A lifeboat escape system

(57) An escape system to enable a group of people to escape in rapid succession from, for example, a marine platform, into a rescue craft, the system comprising a passageway (12) defining an exit, a stowed liferaft (14) having a painter (16) connected to the passageway (12), a fixed rail (21) having thereon a plurality of travellers (24) each with a loop (25). Once the liferaft is launched personnel may escape successively each by a separate frictional descender. Each person attaches his descender to one of the travellers (24) which is then manoeuvred to a position (27) from which the descent will commence. After each descent the traveller (24) with the descender still attached thereto is moved further along the rail (21) to a remote end (23). During descent, each person will attach a sliding loop to the painter (16). Thus, there is no danger of personnel not reaching the rescue craft or of descenders becoming entangled since each descender will be moved in turn to the remote end (23) of the rail (21).



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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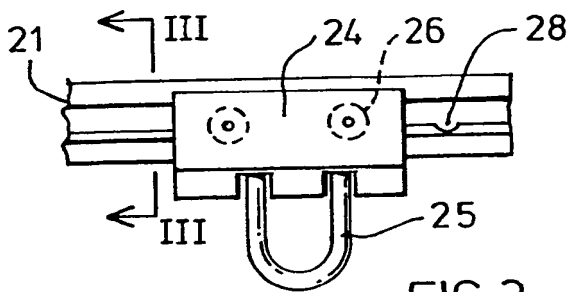


FIG. 2

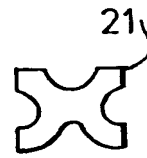


FIG. 3

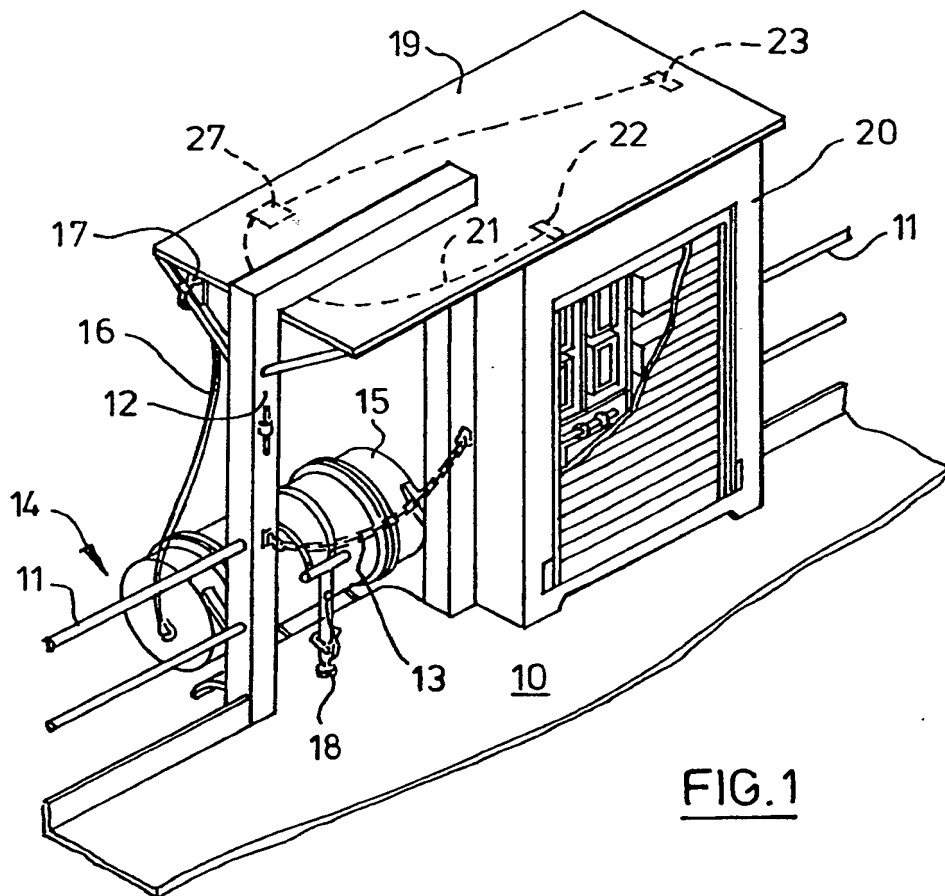
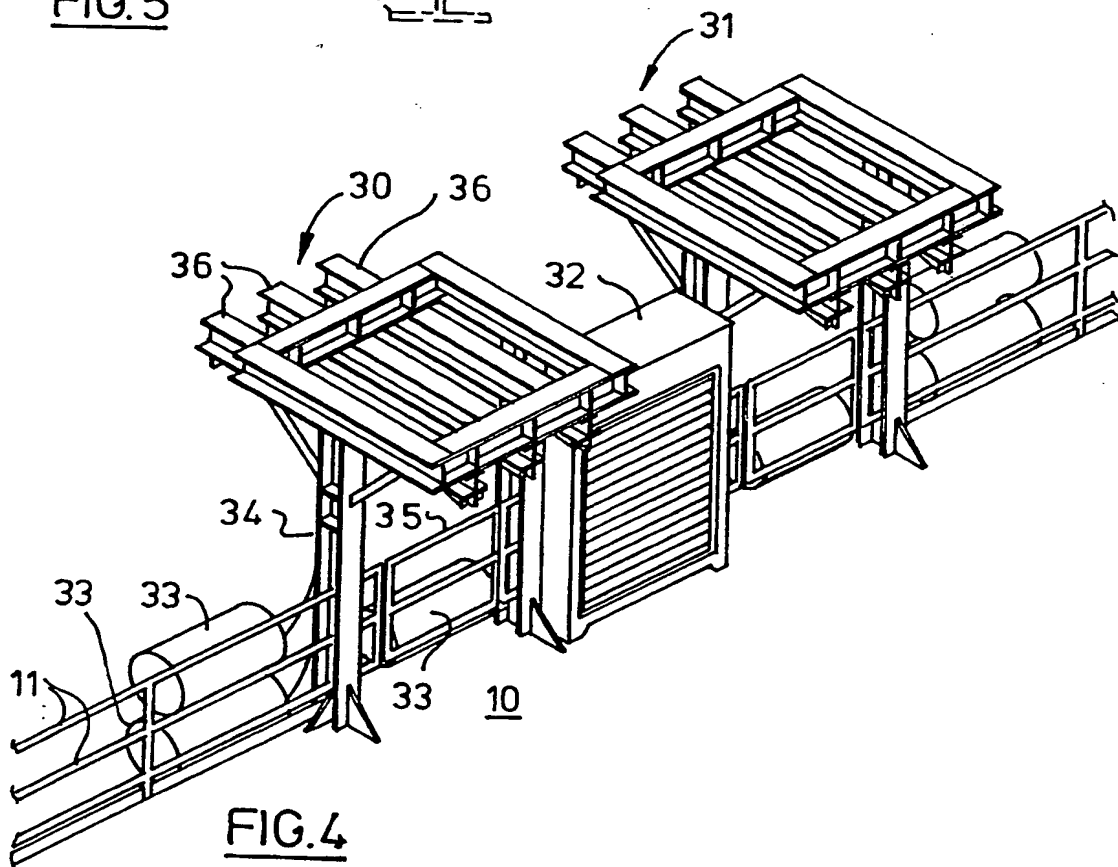
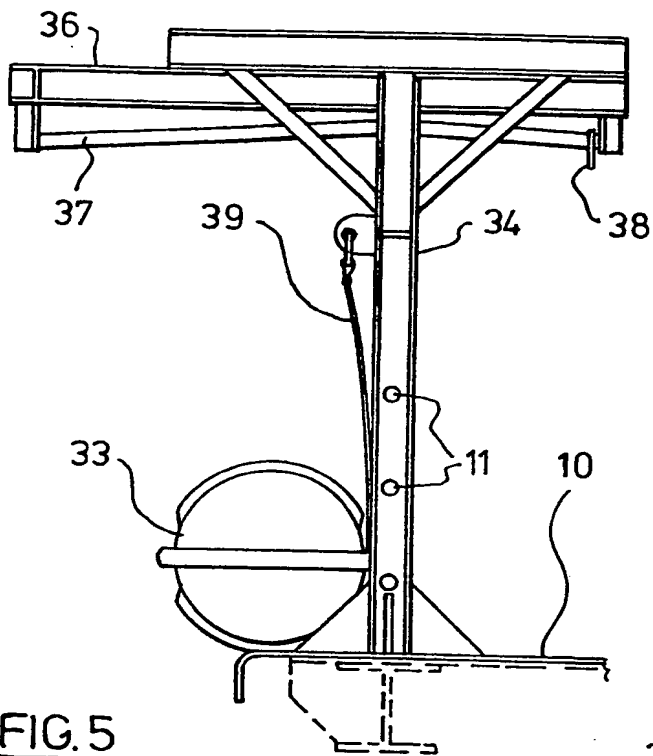


FIG. 1

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## A LIFERAFT ESCAPE SYSTEM

THIS INVENTION concerns a system to enable a group of people to escape in rapid succession from an elevated structure such as a ship or marine platform, into a rescue craft.

Traditionally, inflatable rescue craft consist of three essential types namely lifeboats mounted on davits such that escaping personnel enter the lifeboat which is subsequently lowered onto the water, chutes or slides which connect the structure with the liferaft; and so-called kick-over liferafts which are usually stowed in cylindrical containers and attached to the structure by a line, the device being thrown overboard and requiring personnel subsequently to climb down into the raft using nets or ropes suspended from the structure.

Disadvantages with davit-mounted liferafts, and chute or slide systems are their weight and cumbersome nature, their initial expense, and the need for regular maintenance to ensure that the associated cables, pulleys and winches are maintained in working order in what is a corrosive and hostile environment.

A disadvantage of kick-over liferafts is that once they are inflated on the water they will drift due to wind and tide, and personnel may be forced to enter the water and then swim towards the liferaft. Tides, currents, marine life, evacuee injuries and other

hazards are such that there is a danger that escaping personnel may never reach the raft.

Current legislation in many countries is requiring that kick-over liferafts be replaced by davit-mounted or chute based systems, and this is presenting problems, particularly in circumstances where limited space is available and additional weight is unacceptable.

An object of the present invention is to provide an escape system utilising a kick-over liferaft but wherein the dangers usually associated therewith are substantially overcome.

According to the present invention there is provided an escape system to enable multiple personnel to escape in rapid succession from an elevated structure into a liferaft, comprising means defining an exit at an escape position on said structure, means releasably supporting a stowed liferaft adjacent said exit, a line connecting the liferaft to the structure, a plurality of loops or the like movable along a fixed rail which extends from said escape position to a second position remote therefrom, such that a plurality of frictional descenders may be attached successively to said loops moved to said second position successively after escape.

An embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:-

Fig. 1 is an isometric view of a liferaft escape system made in accordance with the invention;

Fig. 2 is a detailed elevational view of part of said system;

Fig. 3 is a vertical section taken on line III-III of Fig. 2;

Fig. 4 is an isometric view of a modified system;

and Fig. 5 is a side elevation thereof.

It is to be understood that, although not specifically illustrated and described, there are to be used with this system a plurality of frictional descenders of the kind described in International patent application WO 90/04998.

A system made in accordance with the present invention will be described for use on a marine drilling platform including a deck 10 having guard rails 11.

At an escape station there is provided a fixed arch 12 normally cordoned off by a chain 13 or a gate, and serving, when required, as an escape point.

Mounted outside and across the arch 12 is a stowed liferaft 14. The raft is contained, in the usual way, within a

cylindrical housing 15 through which protrudes a securing line or painter 16 attached at 17 to the arch 12. A quick-release device 18 is provided to release the liferaft.

A protective roof panel 19 extends across the top of the arch 12 and over a storage locker 20. Within the latter may be stowed life jackets, survival suits and frictional descenders of the kind described in specification WO 90/04998.

Fixed beneath the roof panel 19 is a rail 21 which extends from a fixed end 22 above and to one side of the exit arch 12, in a U-shaped configuration to a further fixed end 23 remote therefrom. Supported on the rail 21 are a plurality of travellers 24 each having a fixed loop 25 as illustrated in Fig. 2. Each traveller 24 runs on rail 21 by means of two pairs of rollers 26.

The number of travellers 24 and loops 25 provided on rail 21 is equivalent to the personnel capacity of the liferaft 14.

At a point illustrated at 27 in Fig. 1 rail 21 includes catchment means in the form of two pairs of dimples one of which can be seen at 28 in Fig. 2 such that traveller 24 may be retained temporarily at position 27 if a downward load is applied to loop 25. Once the load is relieved the traveller may pass on towards fixed point 23.

In use, assuming the liferaft 14 to have a capacity of

ten persons then there will be ten travellers 24 located on rail 21 close to fixed end 22. The liferaft will be launched to descend onto the water with its painter 16 remaining attached at 17 to the structure. Each person will be equipped with a harness and frictional descender. The first person to escape will attach his descender to the loop 25 of the first traveller 24. His descender may be equipped with a looped strap which should then be clipped onto the painter 16. He will manoeuvre his traveller 24 to the dimpled position at 27 and descend towards the liferaft. Irrespective of the direction of drift of the raft owing to tide and/or wind he will descend alongside the painter 16 to arrive in or very close to the raft. Once he is in the raft or the water, the descending device may be detached leaving him in his harness but attached to the painter line by the connecting strap whereupon, at the escape point, the associated traveller 24 may proceed towards the fixed end 23 of track 21. The second person will then escape in the same manner and so on until all personnel have escaped into the liferaft and their descenders have been released with all travellers resting against fixed end 23 of track 21.

By this means, there is no danger of personnel not reaching the raft or of escape lines becoming tangled since each line will be moved in turn to a position on the rail 21 remote from the escape point.

Referring now to Figs. 4 and 5, in an alternative arrangement there may be provided two escape facilities indicated generally at 30 and 31 with a common storage locker 32 located between them. In this example, each escape facility is provided with



three liferafts 33. Thus, if each raft is designed to carry ten persons then the combined escape facilities 30 and 31 will serve as many as sixty persons.

As in the case of Figs. 1 to 3, in Fig. 4 there is illustrated, for each escape facility 30, 31, a generally arched structure 34 having a removable gate 35. Mounted in parallel across the top of the arch 34 are three straight beams 36 extending outwardly in the direction of escape, i.e. transverse to the guard rails 11.

Referring now to Fig. 5 it will be seen that each beam 36 supports therebeneath a rail 37 which is inclined downwardly towards the inboard and outboard ends thereof from a position of maximum height part way between the ends, and adjacent the structure 34.

Slidably mounted on each rail 37 are a plurality of running loops 38, only one of which is illustrated, for clarity, in Fig. 5.

As in the previous embodiment, a painter 39 connects each liferaft 33 to the structure 34 and a similar quick release device (not illustrated) will be provided for opening gate 35 and releasing the liferaft.

During escape, each person in turn will attach his

descender to one of the running loops 38 which may then be manoeuvred outwardly on rail 37, whereupon the descent may commence. Used descenders will accumulate at the outboard and lowermost end of rail 37, whilst unused running loops will be available at the inboard end thereof.

If required, the rail 37 may be dimpled at or adjacent its highest point for location of each running loop 38 during descent.

In practice, the width of the opening provided by the structure 34 will be in the region of 1.5 metres and its height will be approximately 2.6 metres. The length of each rail 37 will be approximately equal to the height of the structure.

### CLAIMS

1. An escape system to enable multiple personnel to escape in rapid succession from an elevated structure into a liferaft, comprising means defining an exit at an escape position on said structure, means releasably supporting a stowed liferaft adjacent said exit, a line connecting the liferaft to the structure, a plurality of loops or the like movable along a fixed rail which extends from said escape position to a second position remote therefrom, such that a plurality of frictional descenders may be attached successively to said loops and moved to said second position successively after each escape.
2. An escape system according to Claim 1, including a plurality of frictional descenders for attachment to said loops, each descender having means for slidable attachment to said line connecting the liferaft to the structure.
3. An escape system according to Claim 1 or Claim 2, wherein said fixed rail is provided in a U-shaped configuration and carries thereon a plurality of travellers each having a fixed loop, said rail further including catchment means to retain a traveller temporarily at a predetermined position along said rail when a downward load is applied to said fixed loop, and such that once the load is relieved the traveller may pass on towards the second position on said rail.
4. An escape system according to Claim 1 or Claim 2,

wherein said fixed rail extends outwardly in the direction of escape and is inclined downwardly towards each end thereof from a position of maximum height part-way between the ends.

5. An escape system according to Claim 4, wherein said fixed rail is suspended beneath a support beam running parallel thereto and forming part of said means defining the exit.

6. An escape system according to Claim 4, wherein the length of said fixed rail is substantially equal to the height of the means defining the exit.

7. An escape system according to Claim 5, including a plurality of support beams mounted in side-by-side parallel relationship, each supporting one of said fixed rails such that a number of said rails are provided at the escape position.

8. An escape system according to any preceding claim, including means defining a plurality of exits at said escape position, each means being provided with at least one stowed liferaft.

9. An escape system according to any preceding claim, including a storage locker located immediately adjacent said means defining the exit thus to enable items such as life jackets, survival suits and frictional descenders to be stowed ready for use at the escape position.

10. An escape system substantially as hereinbefore described with reference to and as illustrated in Figs. 1 to 3 or Figs 4 and 5 of the accompanying drawings.

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**Patents Act 1977**  
**Examiner's report to the Comptroller under**  
**Section 17 (The Search Report)**

Application number

9203617.7

**Relevant Technical fields**

(i) UK CI (Edition K ) B7A (ACA AGH)

(ii) Int CI (Edition 5 ) B63C

**Databases (see over)**

(i) UK Patent Office

(ii) ONLINE DATABASE: WPI

Search Examiner

B J PRICE

Date of Search

4 AUGUST 1992

Documents considered relevant following a search in respect of claims

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
Y	WO 90/04998 A1 (ENGINEERING MANGT) See particularly paragraph 4 page 9	1
Y	US 4187570 See particularly figure 4	1

SF2(p)

GH - doc99\fil000154

Category	Identity of document and relevant passages	Relevant to claim(s)

#### Categories of documents

**X:** Document indicating lack of novelty or of inventive step.

**Y:** Document indicating lack of inventive step if combined with one or more other documents of the same category.

**A:** Document indicating technological background and/or state of the art.

**P:** Document published on or after the declared priority date but before the filing date of the present application.

**E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.

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